THE DEVELOPMENT OF A RELIABLE AND VALID MEASURE OF STRESSORS IN POLICING

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ABSTRACT

This grant was awarded to develop and validate the Operational Police Stress Questionnaire (PSQ-Op) and the Organizational Police Stress Questionnaire (PSQ-Org), two measures tailored to the Canadian context. This process was completed over a series of four studies. In Study 1, a series of focus groups were used to elicit the stressors associated with policing. In this study, it became apparent that officers separated their stressors into two general categories: operational and organizational. In the following three studies, the PSQ-Op and PSQ-Org were assessed for reliability, validity, and readability. The findings showed that both forms of the PSQ were highly reliable and demonstrated both discriminant and concurrent validity. The PSQ-Op and PSQ-Org are freely available for use by other researchers.

EXECUTIVE SUMMARY

Background

The relationship between stress and health (i.e., both physical health and psychological well-being) has received much attention over the years, with researchers demonstrating a consistent association between the two (e.g., Matthews & Gump, 2002); that is, the more stress people experience, the poorer their physical and mental health. Compared to those with low stress, people with higher stress levels report significantly lower overall health and well-being, report the presence of significantly more adverse health symptoms (e.g., increased blood pressure, sleep disturbances), are at greater risk for long-term health problems (e.g., hypertension, coronary artery disease, auto-immune disorders, diabetes), are at greater risk for premature mortality, are more likely to experience symptoms of depression, generalized anxiety, post-traumatic stress disorder, and other psychological ailments (e.g., substance abuse), and they utilize significantly more health care resources (e.g., physicians, hospitals, sick days).

Police officers are engaged in a high-risk occupation, one that has been shown to be highly stressful. However, past attempts to study police stress and its associations with poor health and well-being have been limited by the types of measures available to assess stress. First, many measures of occupational stress are generic and do not assess the impact of occupationally specific job stressors (e.g., the Job Stress Survey, developed by Speilberger & Reheiser, 1995; the Occupational Stress Indicator, developed by Cooper, Sloan, & Williams, 1988). While the generic approach may be useful for measuring work-related stress common to, or across, many occupations, it will necessarily under-represent the job stressors for those who work in high-risk jobs such as policing. Thus, specific measures of occupational stress need to be developed for these occupations. The second limitation is that, when police-specific measures of job stress are developed and used, they tend to be rarely used by anyone other than the questionnaire developer. One reason for this idiosyncratic use of available measures is that these questionnaires tend to be excessively long and, as such, officers are unhappy completing them (especially when combined with outcome measures, such as indices of health and well-being). For example, a measure of police daily hassles (i.e., chronic stressors) and uplifts developed by Hart, Wearing, and Headey, (1993) was 112 items long (86 items are daily hassles, while 36 items are uplifts, or positive aspects of policing); the Occupational Stress Indicator contains 155 items, with 61 of those items measuring job-related stress. Thus, researchers may choose a shorter, generic occupational stress questionnaire rather than inundate their officers with an excessively long police stress questionnaire. A second reason for the lack of use of existing police-specific stress measures is that many of these other questionnaires have been developed in the United States, Australia, and the United Kingdom, and there may be cultural differences in policing stressors that may preclude the use of those scales in other countries.

Thus, the purpose of this grant was to overcome the limitations of the existing measures of police stress by developing a short, reliable, and valid measure of police.

Procedures

The project was implemented in two research phases:

1. The first phase of the research involved eliciting the items for a short, reliable, and valid self-report measure of stressors applicable to the policing environment. This was achieved through a series of focus groups conducted with members of the Ontario Provincial Police (OPP). Transcripts of these focus groups were reviewed for common themes and these commonalities served as the basis for an initial set of questionnaire items. In a second study, the initial draft of the questionnaire was then given to a small group of OPP officers for their comments on wording and applicability.

2. In the second phase of the research, the new measure's psychometric reliability and validity was assessed. In Study Three, the questionnaire was given alongside generic measures of perceived stress, daily hassles (i.e., a measure of generic chronic stressors), and negative life events (i.e., a generic measure of acute stressors). This assessed discriminant validity. In the fourth study, the questionnaire was given alongside measures of people's job satisfaction and emotional responses to their work to assess the concurrent validity of the two Police Stress Questionnaires.

Study 1

A series of six focus groups were conducted with serving members of the Ontario Provincial Police. A total of 55 active duty OPP officers were recruited at the OPP Academy in Orillia. All focus groups were mixed gender, with the exception of one all-female focus group. Based on these focus groups, it became obvious that the stressors most salient to OPP officers fell into two general categories: *Organizational Stressors* (i.e., stressors associated with the organization and organizational culture within which one works) and *Operational Stressors* (i.e., stressors associated with doing the job). Three raters reviewed each of the transcripts and the notes taken at each focus group to determine common themes. From this review, two questionnaires were created: a 19-item Organizational Police Stress Questionnaire (PSQ-Org) and a 20-item Operational Police Stress Questionnaire (PSQ-Op). The items on both the PSQ-Op and PSQ-Org appeared frequently enough in the focus groups that we were confident they would be captured by most administrations of the PSQs and that respondents felt they were at least somewhat stressful when they did occur.

Study 2

The overall goals of this study were: (1) to assess how stressful each item was perceived; (2) to assess the general rate of occurrence for each stressor; (3) to assess the correlation between a stressor's frequency of occurrence and its stress rating; (4) to determine the initial reliability of the PSQ-Op and PSQ-Org; and (5) to determine if there were problems with the wording of the items or the instructions.

The first drafts of the Operational Police Stress Questionnaire (PSQ-Op; 20 items) and the Organizational Police Stress Questionnaire (PSQ-Org; 19 items) were given to a new sample of 47 OPP officers at the OPP Academy in Orillia. This group was asked to rate how stressful each item was (on a 7-point scale from "Not at all Stressful" to "Very Stressful"), as well as how frequently each stressor occurred (on a 7-point scale from "Not at all Frequent" to "Very Frequent"). Officers also were asked for their feedback on the wording of the items and instructions, as well as if they thought there were other stressors that were not included in the questionnaires.

The findings showed that the PSQ items were perceived to be moderately stressful. The average stress rating for the PSQ-Op items was 3.47 (Range = 2.38 to 4.85, on a scale from 1-7). The average stress rating for the PSQ-Org items was 3.80 (Range = 2.60 to 4.94, on a scale from 1-7). The responses also revealed that most officers experienced the stressors listed at least somewhat frequently. The average frequency rating for the PSQ-Op items was 3.08 (Range = 2.04 to 4.64, on a scale from 1-7). The average frequency of the PSQ-Org items was 3.36 (Range = 1.85 to 4.74, on a scale from 1-7). The correlation between the average frequency ratings and the average stress ratings was .67 for the PSQ-Op and .72 for the PSQ-Org (correlation coefficients range from zero to +/- 1.00, with numbers closer to +/- 1.00 reflecting stronger associations between the two variables). Thus, the more frequently these stressors were experienced, the higher the perceptions of how stressful they were. The reliability of the PSQ-Op and PSQ-Org was excellent (coefficients alpha = .90 and .89, respectively), with most corrected item-total correlations exceeding their recommended minimum of .30. Finally, the correlation between the PSQ-Op and PSQ-Org was .60, suggesting that the two questionnaires were measuring fairly distinct phenomena, but that there was some overlap.

In summary, the items on the two forms of the PSQ were perceived to be moderately stressful and occurred on a relatively frequent basis. Organizational stressors occurred more frequently, and were perceived to be more stressful, than operational stressors. Based on the participants' feedback and the analysis of the corrected item-total correlations, one of the organizational stress items was split into two separate items (increasing the number of items on the PSQ-Org to 20). In addition, the wording of three other items and the instructions were altered slightly (see Appendix 1 and Appendix 2).

Study 3

The goal of Study 3 was to determine the both the reliability and discriminant validity of the PSQ-Op and PSQ-Org. Reliability of the PSQ-Op and PSQ-Org was determined by computing their Cronbach alphas (values should be higher than .80) and examining their corrected item-total correlations (values should be higher than .30). For the two forms of the PSQ to have discriminant validity, the correlations between the PSQ-Op and PSQ-Org, on the one hand, and more general measures of stress should be low ($r < .50$), or not significant at all.

A total of 197 active duty police officers were recruited from the OPP Academy (Orillia, ON) and the Ontario Police College (Aylmer, ON). Sixty-nine percent of the officers in this study were OPP members, with the other participants coming from a variety of other police organizations throughout Ontario and the Royal Canadian Mounted Police (RCMP). Officers completed the PSQ-Op, PSQ-Org, and three other measures of general stress: the Perceived Stress Scale (a general measure of stress currently being experienced by an individual), a short version of the Daily Hassles Questionnaire (a measure of lower intensity, chronic stressors), and the Negative Life Events Scale (a measure of higher intensity, acute stressors).

First, analyses showed that the reliability of both the PSQ-Op and PSQ-Org was excellent. The Cronbach alpha reliability statistic was .92 for the PSQ-Op and .92 for the PSQ-Org. Corrected item-total correlations ranged from .39 to .71. Second, correlations between the PSQ-Op, PSQ-Org, General Perceived Stress, Daily Hassles, and Negative Life Events tended to be low to

moderate, with correlations ranging from .26 to .54. Two of the six correlations were above .50: PSQ-Op scores were correlated .53 with the responses to the general Perceived Stress Scale and .54 with responses to the Daily Hassles scale.

In summary, the PSQ-Op and PSQ-Org demonstrated excellent reliability and discriminant validity. The fact that four of the six correlations were below .50 suggests that the PSQ-Op and Org are measuring dimensions of stress that are distinct from what these other questionnaires are measuring.

Study 4

The goal of Study 4 was to replicate the high degree of reliability the two PSQ questionnaires exhibited in Study 3 and then determine the concurrent validity of the PSQ-Op and PSQ-Org, via their associations with two measures of job satisfaction. It is hypothesized that those with higher scores on both the PSQ questionnaires should report lower levels of job satisfaction and more negative work-related attitudes. In other words, there should be a negative correlation between PSQ scores and both job satisfaction and positive work-related emotions, but a positive correlation between the two PSQ scores and negative work-related emotions.

A total of 188 active duty police officers were recruited from the OPP Academy (Orillia, ON) and the Ontario Police College (Aylmer, ON). Eighty-three percent of the officers in this study were OPP members, with the other participants coming from a variety of other police organizations throughout Ontario and the RCMP. Officers completed the PSQ-Op, PSQ-Org, and two commonly used measures of job satisfaction: the Job Satisfaction Survey (JSS) and the Job-related Affective Well-being Scale (JAWS). The JSS measures general job satisfaction along nine dimensions: Satisfaction with Pay, Promotion Opportunities, Immediate Supervisor, Fringe Benefits (both monetary and non-monetary), Contingent Rewards (appreciation, recognition, and rewards for work well-done), Operating Policies and Procedures, Co-workers, Nature of the Work, and Communication within the Organization. The JAWS measures both positive and negative emotions the employee has about his or her job. Examples of positive emotions include "My job made me feel at ease," "My job made me feel content," and "My job made me feel inspired." Examples of negative emotions include "My job made me feel angry," "My job made me feel annoyed," and "My job made me feel confused."

With regard to the reliability of the two forms of the PSQ in this sample of police officers, both showed excellent reliability. The Cronbach alpha reliability coefficients were .93 for both the PSQ-Op and .92 for the PSQ-Org. The correlations between the PSQ-Op, PSQ-Org, and JSS (both the overall JSS score and the nine JSS subscales) showed that higher PSQ-Op and PSQ-Org scores were correlated with lower scores on the JSS, its subscales, and the positive work-related emotions subscale of the JAWS. Higher PSQ-Op and PSQ-Org scores also were correlated with higher scores on the negative work-related emotions subscale of the JAWS.

In summary, the high degree of reliability of the PSQ-Op and PSQ-Org scales was demonstrated in this second group of officers. In addition, the finding that the PSQ-Org scale was more strongly associated with poorer levels of job satisfaction, higher levels of negative work-related emotions, and lower levels of positive work-related emotions than Operational stressors suggests that organizational stressors are more closely linked to poor job satisfaction.

Conclusions

Police officers appear to make an important distinction between operational stress and organizational stress. The results of the focus groups confirmed that dichotomy. It was with that distinction in mind that we created two separate PSQs: the PSQ-Op (Appendix 1) and the PSQ-Org (Appendix 2).

Three separate studies demonstrated the reliability of the PSQ-Op and PSQ-Org. This is important because it means that the 20 items in each questionnaire form two coherent wholes, one measuring Operational Stress associated with policing, the other measuring Organizational Stress associated with policing. Without evidence of the two scales' reliability, researchers would not be able to use these scales with confidence.

Studies 2, 3, and 4 also demonstrated the validity of the two measures. Study 2 showed that the stress ratings of the PSQ items were positively correlated with their frequency (i.e., the more frequently they occur, the more stressful they are perceived). Study 3 showed that the PSQ-Op and PSQ-Org were only partially correlated with self-perceptions of general stress, daily hassles, and negative life events. These moderate correlations suggest that work-related and non-work-related stress co-occurs. Whether work-related stressors add stress to officers' personal lives, or whether stress in officers' personal lives add stress to officers' professional lives cannot be determined without using a longitudinal method.

The PSQ-Op and PSQ-Org also are correlated with lower levels of job satisfaction and more negative (and fewer positive) emotions about one's job. While the correlations with poor job satisfaction are statistically significant for both the PSQ-Op and PSQ-Org scales, the correlations are stronger for the PSQ-Org, suggesting that this factor is more important to job satisfaction in these police officers.

What are the implications of this research? The first is that the development of the two PSQ measures represents an advance in the measurement of occupational stress in police officers. Prior to this, researchers wanting to study police stress and its outcomes in Canada have been limited either to general measures of occupational stress that do not tap the specific nature of policing, or they had to use questionnaires designed to assess police stress but were either too large (i.e., burdening the officers and reducing the quality of the information obtained) or too culturally specific (e.g., developed in the UK, US, or Australia, where there may be differences in policing stressors). Each being only 20 items long, the PSQ-Op and PSQ-Org reduce the survey burden officers face when filling out questionnaires. In a similar vein, they provide researchers with opportunity to tailor their studies of police stress by allowing them to focus either on Operational Stress, Organizational Stress, or both.

A second implication is that policy makers within police organizations and unions can use the data from these two questionnaires to design a less stressful working environment for their employees or members. Where police forces may want to start is with the Organizational stressors. We suggest this because PSQ-Org scores were significantly higher than PSQ-Op scores in all studies. Similarly, the correlations between PSQ-Org scores and both JSS and JAWS scores were much higher than the similar correlations between PSQ-Op scores and these measures of job satisfaction.

THE DEVELOPMENT OF A RELIABLE AND VALID MEASURE OF STRESSORS IN POLICING

The Stress-Health Relationship

The relationship between stress and health (i.e., both physical health and psychological well-being) has received much attention over the years, with researchers demonstrating a consistent association between the two (e.g., Cohen & Herbert, 1996; Matthews & Gump, 2002); that is, the more stress people experience, the poorer their physical and mental health. Compared to those with low stress, people with higher stress levels report significantly lower overall health and well-being, report the presence of significantly more adverse health symptoms (e.g., increased blood pressure, sleep disturbances), are at greater risk for long-term health problems (e.g., hypertension, coronary artery disease, auto-immune disorders, diabetes), are at greater risk for premature mortality, are more likely to experience symptoms of depression, generalized anxiety, post-traumatic stress disorder, and other psychological ailments (e.g., substance abuse), and they utilize significantly more health care resources (e.g., physicians, hospitals, sick days).

The stress-health relationship can be particularly worrisome for those who work in high stress occupations. That is, working in an occupation that is highly stressful puts these people at greater risk for poor physical health and psychological well-being (e.g., Keita & Sauter, 1992; Quick, Murphy, & Hurrell, 1992; Sauter & Murphy, 1995). For example, studies have explored the associations between occupational stress and employee burnout (e.g., Burke, 1993; Stearns & Moore, 1993), noting that work-related stress is predictive of higher levels of burnout, which, in turn, is associated with poor psychological well-being and an increased number of health concerns.

Occupational stress also has a negative effect on employers. Direct costs to employers include reduced productivity, as well as increased absenteeism and employee turnover as a result of issues such as stress-related illness, burnout and low levels of job satisfaction (e.g., Spielberger, Reheiser, Reheiser, & Vagg, 2000). Other costs to employers include health insurance payments to individuals and their families for workplace-related psychological disabilities. A recent study by Sauter (1992) revealed that occupational health insurance payouts total more than five billion dollars annually in the US alone. While these costs tend to be borne by the insurers, as opposed to the employers, they are passed onto the employers and employees through higher insurance premiums.

Stress in Policing

One of the most highly stressful occupations in North America is policing (e.g., Pendleton, Stotland, Spiers, & Kirsch, 1989). For example, Pendleton et al. (1989) note that police officers report significantly more stress than firefighters.

But what are the aspects of policing that are most stressful? This is an important question to ask because once the sources and levels of stress associated with policing are identified, appropriate policies and procedures put into place to reduce the impact of those stressors.

However, past research exploring police stress has been limited in several ways. First, much of the research has been qualitative in nature, using focus groups and one-on-one interviews with officers to identify the stressors and the impact it has on them. While a qualitative approach gives researchers an excellent snapshot into the lives of police officers, it cannot be used to quantify how much stress officers are under or how those stressors influence adverse outcomes (e.g., physical health problems, psychological well-being).

A second limitation to existing police stress research revolves around the measurement of the occupational stressors themselves. There are two approaches to measuring occupational stress. The first is to use a generic occupational stress measure such as Spielberger's Job Stress Scale (e.g., Spielberger & Reheiser, 1994; 1995; Turnage & Spielberger, 1991) or Cooper, Sloan and Williams' (1988) Occupational Stress Indicator. However, general measures of job stress only assess the stressors that are common across a wide range of occupations. Furthermore, researchers have begun to question whether these types of measures have similar psychometric properties in different occupational settings (e.g., Lyne, Barrett, Williams, & Coaley, 2000). General measures of occupational stress fail to account for the fact that there are several aspects of policing that are unique to this occupation (e.g., witnessing traumatic events, shooting others and being shot at, dealing with the court system). Thus, police stressors need to be measured more directly. In this way, researchers can assess the major stressors associated with policing and determine their correlation with adverse outcomes.

A third limitation to existing police stress research is that, while there exists three major police stress scales, they are rarely used by researchers other than those who developed them. There are several reasons for this. The Police Stress Survey (PSS; Spielberger, Westberry, Grier, & Greenfield, 1979; 1981), for example, is a 60-item measure developed and validated using samples of police officers from Florida. While it is a very comprehensive survey of police stressors, the PSS has not been widely adopted. This is, in part, because Spielberger and his colleagues never published the PSS in the open scientific literature. This limits the PSS's availability to word of mouth. In addition, Spielberger et al. shifted their focus from the stressors associated with specific occupations like policing to the study of general, occupational stressors. To this end, Spielberger et al. used their experiences with the development of the PSS to create and validate the popular Job Stress Survey (e.g., Spielberger & Reheiser, 1994; 1995; Turnage & Spielberger, 1991).

The Police Daily Hassles Scale (Hart, Wearing, & Headey, 1993) was developed by Australian researchers to assess the more chronic (as opposed to acute) aspects of policing. Daily hassles tend to be less stressful than acute stressors (e.g., death of a family member, moving one's home, starting a new job), but because they occur more frequently they have been linked with poor health and psychological well-being (e.g., Kanner, Coyne, Schaefer, & Lazarus, 1981). The Police Hassles scale contains 86 stressors from both the operational and organizational dimensions. There are 10 organizational dimensions tapped by the Police Hassles Scale: Communication, Morale, Co-workers, Ratings, Supervision, Administration, Individual, Amenities, Equipment, and Promotion. The Police Hassles Scale also assesses 9 operational dimensions: Danger, Victims, Frustration, External, Activity, Complaints, People, Workload, and Driving. However, the Police Hassles Scale is not a frequently used measure. There are three possible reasons for this. First, it could be that the questionnaire is too large. That is, researchers

may feel that the scale's 86 items, in addition to whatever other measures are being using at the time, may place too great a survey burden on the already overworked police officers. Second, the items may be more specific to the Australian policing environment and may not translate across cultures. Finally, the Police Hassles Scale may be perceived to be too narrow in its focus. That is, researchers may wish to combine both acute and chronic stressors into a single questionnaire.

In a more recent study, Brown, Fielding, and Grover (1999) identified a series of operational police stressors that factor analysed into three subgroups: exposure to death and disaster, violence and injury, and dealing with sexual crime. While the items that Brown et al. identified are not part of a measure of police stress, exposure to these stressors has been linked to poor psychological well-being. However, using these items as a measure of police stress is limiting because they assess only the operational aspects of policing and do not tap the organizational stressors faced by officers.

A final limitation to existing police stress research is that it is overly focussed on the job itself and does not recognize that work-family boundaries are permeable (Greenhaus & Parasuraman, 1986). That is, work-related stress can lead to increased family-related stress and vice versa. Thus, any attempts to develop a measure of police stress needs to consider these influences. To date, family influences on the occupational stressors associated with policing have not been quantified.

Research Goals

The goal of the present research is to develop a reliable and valid measure (or measures) of police stress: the Police Stress Questionnaire (PSQ). This measure will be short in length so as to minimize as much survey burden as possible amongst respondents. It also will contain no terminology specific to the Canadian police culture in the hopes that it will be adopted in other countries. The benefit to this latter goal is that, by using a common instrument, differences in policing-related stress between officers in different countries can be explored.

The items for this measure will be developed using a focus group approach so that relevant stressors can be identified. Quantitative psychometric analyses using newly recruited samples of officers will be used to determine the reliability and validity of the measure(s). These analyses will assess reliability and internal consistency, as well as discriminant and concurrent validity. Once the reliability and initial validity of the measure(s) has been assessed, it will be freely available for use by educational institutions and policing agencies themselves.

STUDY 1

Goal

The goal for Study 1 was to determine the main stressors experienced by active duty police officers. These stressors would then be used as the basis for developing a Police Stress Questionnaire.

Participants

A total of 55 Ontario Provincial Police (OPP) officers (39 men, 16 women) participated in Study 1. The age of the participants ranged from 24 to 53 years, with an average of 38 years (SD = 7 years). Seventy-five percent of the participants were married, 20% were single, and 5% were divorced. Sixty-seven percent of the participants had children. The officers came from all six OPP regions: 9% from Central, 11% from Eastern, 13% from the Greater Toronto Area, 35% from North-East, 6% from North-West, and 26% from Western. The years of experience as a police officer ranged from 1 to 28, with an average of 12 years (SD = 8 years). Forty-two percent of the participants were Constables, 43% either were Sergeants, Acting Sergeants, or Staff Sergeants, and 6% were Detectives.

Procedure

A focus group method was deemed the best way to generate a series of stressors associated with policing. The rationale behind using focus groups is that they provide an open forum with which researchers can elicit a rich source of qualitative data. Focus groups are an important research tool for several reasons: (1) they assist researchers in uncovering and better understanding the complex interrelationships among phenomena of interest; (2) they aid in the development of questionnaires; and (3) they assist in the preparation of large-scale quantitative research (Kreuger, 1994). The use of focus groups is especially beneficial in the initial stages of research.

Participants were approached by an experienced research consultant during courses at the OPP Academy in Orillia, ON. All were invited to participate in a focus group session lasting between 90-120 minutes after their classes were finished for the day. A maximum of 10 participants was allowed in each focus group and attempts were made to include only those with similar ranks in each session. All focus groups were of mixed gender, with the exception of one focus group that was conducted with only female participants. One focus group was conducted with mostly senior OPP staff (Detectives and Staff Sergeants).

Upon arriving at the meeting room, the research consultant introduced the Principal Investigator for the project. He outlined the goals of the study, briefed the participants on the informed consent process and confidentiality issues, and answered any questions. After giving informed consent and completing a short survey asking basic demographic questions, the research consultant took over and led the focus group. Bullet points were recorded for each session and kept visible so that participants could refer back to their session's highlights at any point during their discussion. All sessions were tape recorded with participants' consent. Participants received a nominal payment ($20.00 in gift certificates) for their participation in the study.

Results and Summary

To generate discussion around the issue of stressors associated with policing from as broad a spectrum as possible, five questions were presented to each focus group: (1) "What do you consider to be the most stressful aspects of policing?" (2) "What is the impact of job-related stress on your family or in other police families that you are aware of?" (3) "What are the effects of stress at home on your job performance? Or, what effects have you seen in others?" (4) "What are the effects of the job on your health or on the health of other officers?" and (5) "How can the OPP help reduce stress?" A theoretical framework in which it was recognized that work-family boundaries are permeable (i.e., work stressors affect family stress and family stressors

influence work stress) guided the selection of the first four questions. The latter question was not directly related to the research, but was included so that the officers could make suggestions to the OPP management through this forum. The results will be summarized below.

What do you consider to be the most stressful aspects of policing? The focus groups elicited several possible stressors associated with policing. Ten of the most frequently occurring stressors were: shift work, excessive workload, dealing with supervisors, dealing with coworkers, lack of public support, dealing with the courts, traumatic events, adverse effects on relationships with family and friends, adverse effects on health (e.g., poor food, lack of exercise, back problems weight of belt), and dealing with the organization (including the union).

What is the impact of job-related stress on your family or in other police families that you are aware of? Ten of the most frequently occurring stressors associated with this were: job stressors do not disappear when off-duty, feeling that you are always on the job when you are off duty, childcare is difficult to manage when shifts change frequently, family members are tainted by their partner's or parent's role as a police officer (especially in rural communities; families can hide their occupations more in urban settings), children taunted by peers because parent is a police officer, officers miss out on family events (e.g., birthdays and holidays), adverse effects on relationships because officers never home, spouse's fear about job dangers, mobility is difficult for families, and management decisions rarely consider family implications.

What are the effects of stress at home on your job performance? Or, what effects have you seen in others? Six of the most frequently occurring stressors associated with this were: home stressors follow you to work (i.e., cannot turn them off entirely), not as motivated at work if there is trouble at home, not as observant at work if there is trouble at home, trouble at home can lead to adverse interactions with the public, trouble at home can lead to adverse interactions with colleagues (peers and supervisors), and trouble at home can lead to resenting the job.

What are the effects of the job on your health or on the health of other officers? Eight of the most frequently occurring stressors associated with this were: fatigue from shift-work, poor eating habits (can lead to "cruiser butt"), lack of time to exercise, lower back strain from the weight of the belt, substance use (e.g., alcohol, cigarettes, caffeine), effects of traumatic events (e.g., Posttraumatic Stress Disorder, Depression, stress leave), overall mental health (e.g., cynical, less tolerant, angry), and general health problems (e.g., digestive problems, migraines).

How can the OPP help reduce stress? Eight of the most frequently occurring suggestions were: promote a better work-life balance (e.g., shift-work and overtime), promote better fitness and health opportunities (e.g., provide time and incentives for exercise), proper staffing levels (i.e., most detachments are understaffed which leads to excessive overtime), consistent management style, reduce "red tape" to increase time spent interacting with the community, revisit technological additions (i.e., perceptions that they are taking away time from policing and community interaction), consider impact on families in operational decisions (e.g., postings), and improve resources (i.e., there is a feeling that some detachments are resource rich while others are coping with substandard equipment).

Summary. The two investigators plus a research assistant reviewed the transcripts from the focus groups. Based on these comments, it became evident that officers organize their stressors into two categories: *Operational* (i.e., stressors associated with doing the job) and *Organizational* (i.e., stressors associated with the organization and culture within which they are performing their job). Based on this distinction, we created two separate questionnaires: The Operational Police Stress Questionnaire (PSQ-Op; 20 items) and the Organizational Police Stress Questionnaire (PSQ-Org; 19 items).

STUDY 2

Goals

There were five main goals for Study 2: (1) to assess how stressful each PSQ item was perceived to be; (2) to assess the general rate of occurrence for each PSQ stressor; (3) to assess the correlation between a stressor's frequency of occurrence and its stress rating; (4) to determine the initial reliability of the PSQ-Op and PSQ-Org; and (5) to determine if there were problems with the wording of any of the items or the instructions. First, it is important to determine the degree to which each item is perceived to be stressful. That is, just because members in focus groups believe the item to be stressful does not mean that larger groups of officers also will perceive that item to be a stressor. Secondly, with regard to the rate of occurrence for each stressor, it was hoped that the PSQ items would occur on a range of frequencies, from not very often through to very often. Having a variable rate of occurrence means that the PSQ-Op and PSQ-Org are not tapping solely chronic or acute stressors, but a mixture of the two. Third, the correlation between the frequency of a stressor and its perception as a stressor is important because it is assumed in the scientific literature that the more frequently a stressor occurs, the more stressful it is perceived. This is the rationale behind the development of daily hassles measures. Fourth, it is important to assess the initial reliability of the two measures using Cronbach's coefficient alpha (values should be higher than .80) and the corrected item-total correlations (values for each item should be greater than .30). This will help identify items that may need to be reworded or removed from the questionnaires. Finally, it is important to determine that the wording of each item is accurate and occupationally relevant; items that use inappropriate terms or phrases will reflect badly on the researchers and may lead to spurious data being collected. Similarly, it is important to receive feedback on the ease of understanding for each scale's rating instructions and response formats.

Participants

The participants in Study 2 were 47 active duty OPP officers (35 men, 10 women, and 2 people who did not specify their gender). The age of the participants ranged from 28 to 57 years, with an average of 37 years (SD = 6 years). Seventy-three percent of the participants were married, 16% were single, and 11% were either separated or divorced. Sixty-seven percent of the participants had children. The officers came from five of the six OPP regions: 24% from Central, 15% from Eastern, none from the Greater Toronto Area, 33% from North-East, 3% from North-West, and 24% from Western. The years of experience as a police officer ranged from 2 to 35, with an average of 11 years (SD = 7 years). Thirty-six percent of the participants were Constables, 60% were either Sergeants, Acting Sergeants, Detective Sergeants, or Staff Sergeants, and 4% were either and Inspector or Superintendent.

Measures

Participants completed the initial versions of the PSQ-Op and PSQ-Org that emerged from the focus group sessions conducted in Study 1. The initial version of the PSQ-Op contained 20 items, while the PSQ-Org contained 19 items. Participants were asked to determine how stressful they thought each item was, using a 7-point Likert scale ranging from "Not at All Stressful" to "Very Stressful". Because we also wanted to determine the rate of occurrence for each stressor, participants rated the PSQ-Op and PSQ-Org a second time, using a 7-point Likert scale ranging from "Not at all Frequent" to "Very Frequent." Responses to the PSQ-Op and PSQ-Org were averaged into separate scores for both stress and frequency ratings; higher scores indicate a greater degree of perceived stress or frequency of occurrence.

Procedures

Prospective participants were approached by an experienced research consultant during upgrading courses at the OPP Academy in Orillia, ON. All were invited to participate in a study whose goal was to develop two reliable and valid police stress questionnaires. They were told that they would be asked to fill out two short questionnaires twice, and provide feedback on the wording of the items and the instructions.

All questionnaires were completed out of class time and in small groups at the OPP Academy. The research consultant outlined the goals of the study, briefed the participants on the informed consent process and confidentiality issues, and answered any questions. After participants gave their informed consent, the research consultant handed out questionnaire booklets containing the PSQ-Op with stress-rating instructions, the PSQ-Org with stress-rating instructions, the PSQ-Op with frequency rating instructions, the PSQ-Org with frequency rating instructions, and a series of demographic questions. A space for additional comments was included at the end of the questionnaire booklet. Participants received a nominal payment ($12.00 in gift certificates) for their participation in the study.

Results and Summary

Descriptive Statistics. Tables 2.1 and 2.2 report the basic descriptive statistics associated with the PSQ-Op and PSQ-Org stress ratings, respectively. As can be seen, most items were perceived to be moderately stressful, with average item ratings tending to fall slightly above or slightly below the midpoint in the rating scale. The average stress rating for the PSQ-Op was 3.47, while the average stress rating for the PSQ-Org was 3.80. A paired-samples *t*-test compared these two means and determined that the PSQ-Org stressors were perceived to be significantly more stressful than the PSQ-Op stressors, $t(46) = 2.76$, $p < .008$. Tables 2.3 and 2.4 report the basic descriptive statistics associated with the PSQ-Op and PSQ-Org frequency ratings, respectively. Most items were thought to occur relatively frequently, with averages ranging from 2 to 5 on a 7-point scale. The average frequency rating for the PSQ-Op was 3.08, while the average frequency rating for the PSQ-Org was 3.36. A paired-samples *t*-test compared these two means and determined that the PSQ-Org stressors were rated as occurring more frequently than the PSQ-Op stressors, $t(46) = 2.79$, $p < .008$.

Table 2.1: Range, mean, and standard deviation for the items from the PSQ-Op (stress ratings)

	Minimum	Maximum	Mean	Std. Deviation
Shift work	1	7	3.98	1.482
Working alone at night	1	7	3.35	1.636
Over-time demands	1	7	3.66	1.578
Risk of being injured on the job	1	7	3.22	1.489
Work-related activities on days off	1	7	3.76	1.649
Traumatic events	1	7	4.11	1.581
Managing social life outside work	1	6	3.09	1.544
Not enough time available to spend with friends and family	1	7	3.74	1.635
Paperwork	1	7	4.85	1.302
Eating healthy at work	1	7	3.54	1.735
Finding time to stay in good physical condition	1	7	3.98	1.622
Fatigue	1	7	4.15	1.518
Occupation-related health issues	1	7	3.02	1.700
Lack of understanding from family and friends about your work	1	7	2.83	1.810
Making friends outside the job	1	7	2.38	1.540
Upholding a higher image in public	1	7	3.13	1.483
Negative comments from the public	1	7	3.40	1.611
Limitations to your social life	1	6	2.72	1.394
Feeling like you are always on the job	1	7	3.52	1.709
Friends/family feel the effects of the stigma associated with your job	1	7	2.83	1.551
Mean Operational PSQ Score	1.95	5.70	3.4700	.92000

Table 2.2: Range, mean, and standard deviation for the items from the PSQ-Org (stress ratings)

	Minimum	Maximum	Mean	Std. Deviation
Dealing with co-workers	1	7	3.17	1.508
Feeling that different rules apply to different people	1	7	4.21	1.559
Feeling like you always have to prove yourself to the organization	1	6	3.43	1.347
Excessive administrative duties	2	7	4.72	1.394
Constant changes in policy/legislation	1	7	4.28	1.514
Staff shortages	1	7	4.94	1.405
Bureaucratic red tape	2	7	4.74	1.359
Too much computer work	2	7	4.79	1.350
Lack of training on new equipment	1	7	3.38	1.526
Perceived pressure to volunteer free time	1	7	3.02	1.751
Dealing with supervisors	1	7	3.04	1.549
Inconsistent leadership style	1	7	3.70	1.731
Lack of resources/inadequate equipment	1	7	4.11	1.564
Unequal sharing of work responsibilities	1	7	3.94	1.725
If you are sick or injured your co-workers seem to look down on you	1	7	2.60	1.814
Leaders over-emphasize the negatives	1	7	3.64	1.893
Internal investigations	1	7	3.68	1.912
Dealing with the court system	1	7	3.74	1.567
The need to be accountable for doing your job	1	6	3.09	1.380
Mean Organizational PSQ Score	1.89	5.79	3.8000	.91500

Table 2.3: Range, mean, and standard deviation for the items from the PSQ-Op (frequency ratings)

	Minimum	Maximum	Mean	Std. Deviation
Shift work	1	7	3.30	1.693
Working alone at night	1	7	2.70	1.718
Over-time demands	1	7	3.28	1.514
Risk of being injured on the job	1	7	2.57	1.424
Work-related activities on days off	1	7	2.89	1.418
Traumatic events	1	7	2.98	1.567
Managing social life outside work	1	7	3.02	1.700
Not enough time available to spend with friends and family	1	7	3.85	1.829
Paperwork	2	7	4.64	1.566
Eating healthy at work	1	7	3.51	1.910
Finding time to stay in good physical condition	1	7	3.89	1.591
Fatigue	1	7	4.15	1.788
Occupation-related health issues	1	7	2.51	1.381
Lack of understanding from family and friends about your work	1	7	2.66	1.710
Making friends outside the job	1	7	2.04	1.351
Upholding a higher image in public	1	7	2.85	1.574
Negative comments from the public	1	7	2.81	1.439
Limitations to your social life	1	7	2.28	1.228
Feeling like you are always on the job	1	7	3.09	1.640
Friends/family feel the effects of the stigma associated with your job	1	6	2.57	1.395
Mean Frequency of Operational Stressors	1.50	5.75	3.0800	.92400

Table 2.4: Range, mean, and standard deviation for the items from the PSQ-Org (frequency ratings)

	Minimum	Maximum	Mean	Std. Deviation
Dealing with co-workers	1	7	3.06	1.607
Feeling that different rules apply to different people	1	7	3.51	1.627
Feeling like you always have to prove yourself to the organization	1	7	3.17	1.551
Excessive administrative duties	1	7	4.70	1.517
Constant changes in policy/legislation	1	7	3.94	1.538
Staff shortages	1	7	4.66	1.564
Bureaucratic red tape	1	7	4.15	1.532
Too much computer work	2	7	4.74	1.539
Lack of training on new equipment	1	7	3.02	1.343
Perceived pressure to volunteer free time	1	6	2.51	1.545
Dealing with supervisors	1	7	3.06	1.607
Inconsistent leadership style	1	7	3.47	1.780
Lack of resources/inadequate equipment	1	7	3.40	1.677
Unequal sharing of work responsibilities	1	7	3.32	1.721
If you are sick or injured your co-workers seem to look down on you	1	7	1.85	1.414
Leaders over-emphasize the negatives	1	7	2.70	1.654
Internal investigations	1	7	2.34	1.403
Dealing with the court system	1	7	3.06	1.607
The need to be accountable for doing your job	1	7	3.09	1.730
Mean Frequency of Organizational Stressors	1.95	6.00	3.3600	.86100

Reliability. An initial assessment of the PSQ-Op's and PSQ-Org's reliability was made with the hopes of identifying items that were having an adverse effect on the scales' internal consistency. Only stress ratings were used to make this determination. Cronbach alpha reliability coefficients were computed for both the Operational and Organizational scales. The Cronbach alpha for the PSQ-Op was .90, while the alpha for the PSQ-Org was .89. Corrected item-total correlations were used to determine if an item was contributing poorly to its scale's internal consistency.

According to Nunnally and Bernstein (1994), these statistics should be greater than or equal to .30. Only one item on the PSQ-Op (Shift Work) and one item on the PSQ-Org (Lack of Resources/Inadequate Equipment) had values that did not meet this threshold.

Correlations Between Perceived Stress and Frequency of Occurrence. To determine whether the frequency with which a stressor is perceived to occur is correlated with its stress rating, a series of bivariate correlations were computed. As Table 2.5 shows, the more frequently a stressor occurs, the more stressful it is perceived to be. The correlations show that the stress and frequency ratings of operational stressors shared 45% of their variance (determined by the use of r^2), while the stress and frequency ratings of organizational stressors shared 52% of their variance. These findings indicate that the stress ratings and frequency ratings are somewhat independent and that the frequency ratings cannot be used as a proxy for the stress ratings.

Table 2.5: Correlations among PSQ-Op and PSQ-Org stress and frequency ratings

		Stress Ratings of PSQ-Op	Stress Ratings of PSQ-Org
Frequency of Operational Stressors	Pearson Correlation	.674**	.547**
	Sig. (2-tailed)	.000	.000
	N	47	47
Frequency of Organizational Stressors	Pearson Correlation	.417**	.721**
	Sig. (2-tailed)	.004	.000
	N	47	47

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation between PSQ-Op and PSQ-Org. A bivariate correlation coefficient was computed in order to determine the extent to which the PSQ-Op and PSQ-Org were associated. The two measures were significantly and positively correlated ($r = .60$). Based on the r^2 value of this correlation, the two measures share 36% of their variance. As such, the operational and organizational stressors measured by these two questionnaires are positively correlated, but distinct.

Summary. Based on these findings, as well as the hand-written comments included throughout each completed questionnaire, we made minor changes to the PSQ-Op and PSQ-Org. First, because of the low item-total correlation for the Lack of Resources/Inadequate Equipment question on the PSQ-Org, we decided to split that item into two separate questions (Lack of Resources and Inadequate Equipment); the PSQ-Op item relating to shift work was left alone for the time being. We also made minor changes to the wording of three other items and the rating instructions.

STUDY 3

Goals

The goals of Study 3 were to determine both the reliability and discriminant validity of the PSQ-Op and PSQ-Org. Reliability of the two PSQ forms was determined by computing Cronbach's coefficient alpha (values should be higher than .80) and examining the scales' corrected item-total correlations (values should be higher than .30). For the two forms of the PSQ to have discriminant validity, the correlations between the PSQ-Op and PSQ-Org, on the one hand, and more general measures of stress (perceived stress, daily hassles, negative life events) should be low ($r < .50$), or not significant at all.

Participants

The participants in Study 3 were 197 active duty police officers (154 men, 43 women). The age of the participants ranged from 24 to 56 years, with an average of 38 years ($SD = 7$ years). Seventy-seven percent of the participants were married, 10% were single, 3% were widowed, and 10% were either separated or divorced. Eighty-three percent of the participants had children. Sixty-nine percent of participants were OPP officers. The OPP officers came from all six OPP regions: 10% from Central, 10% from Eastern, 17% from the Greater Toronto Area, 17% from North-East, 5% from North-West, and 41% from Western. The non-OPP officers came from a wide variety of Ontario municipal forces, as well as the Royal Canadian Mounted Police (RCMP). Fifty-one percent of the participants reported patrolling a rural area, 48% reported patrolling an urban environment, while only 19% reported patrolling a suburban environment. The years of experience as a police officer ranged from 2 to 38, with an average of 14 years ($SD = 8$ years). Sixty-two percent of the participants were Constables or Senior Constables, 23% either were Sergeants, Acting Sergeants, Detective Sergeants, or Staff Sergeants, and 13% were either Detectives or Inspectors (2% did not list their rank).

Measures

Participants in Study 3 completed the PSQ-Op (Appendix 1) and PSQ-Org (Appendix 2) along with three other measures of general life stress: the Perceived Stress Scale, a short form of the Daily Hassles Scale, and the Negative Life Events Scale.

Police Stress Questionnaires. Participants completed the 20-item PSQ-Op and the 20-item PSQ-Org, with the wording changes made following Study 2. All were asked to rate how stressful they found each item to be, using a 7-point Likert scale ranging from "Not at All Stressful" to "Very Stressful." Responses to the PSQ-Op and PSQ-Org were averaged into separate scale scores. Higher scores indicate a greater degree of perceived stress.

Perceived Stress Scale. The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) is a 10-item measure of general stress. Participants are asked to rate how often during the past month they thought or felt the way described in each item (e.g., "How often have you been upset because of something that happened unexpectedly?). Responses are made on a 5-point Likert scale, ranging from "Never" to "Very Often." Responses are averaged (after reverse-coding four items) and higher scores indicate a higher degree of perceived stress. The PSS has

demonstrated reliability and validity (e.g., Cohen et al., 1983; Cohen & Williamson, 1988). The Cronbach alpha reliability coefficient from this study was .86.

Daily Hassles. Daily hassles (i.e., chronic stressors) were measured using a 16-item version of the much larger Daily Hassles Scale developed by Kanner et al. (1981). This short form was first used by McCreary & Sadava (1998, 2000) and has been shown to have good reliability. Participants are asked to think about how much of a hassle each item has been for them lately, using a 4-point Likert scale ("Not a All" to "A Great Deal"). The Cronbach alpha reliability coefficient from this study was .86.

Negative Life Events. The occurrence of negative life events (i.e., acute stressors) over the past 12 months was assessed using a shortened, 34-item version of a 45-item checklist developed by McCreary & Sadava (1998), based on previous work by Hammen, Marks, Mayol, and deMayo (1985). Participants are asked to check all the events that occurred to them over the past year. The number of events they experienced is then summed, with a potential range from 0-34. The more negative life events experienced, the more stress the person is expected to be under.

Procedures

Potential participants were approached by an experienced research consultant during upgrading courses at the OPP Academy in Orillia (ON) and the Ontario Police College in Aylmer (ON). All were invited to participate in a study whose goal was to develop two reliable and valid police stress questionnaires, one measuring Operational stress and the other measuring Organizational stress. They were told that they would also be asked to fill out these plus three other short questionnaires.

All questionnaires were completed out of class and in small groups at either the OPP Academy or the Ontario Police College. The research consultant outlined the goals of the study a second time, briefed the participants on the informed consent process and confidentiality issues, and answered any questions. After participants gave their informed consent, the research consultant handed out questionnaire booklets containing the PSQ-Op, the PSQ-Org, the Perceived Stress Scale, the short form of the Daily Hassles Scale, the Negative Life Events Scale, and a series of demographic questions. A space for additional comments was included at the end of the questionnaire booklet. Participants received a nominal payment ($12.00 in gift certificates) for their participation in the study.

Results and Summary

Descriptive Statistics. Tables 3.1 and 3.2 report the basic descriptive statistics associated with the PSQ-Op and PSQ-Org stress ratings. As can be seen, most items were perceived to be moderately stressful, with average item ratings tending to fall slightly above or slightly below (+/- 1 point) the midpoint in the 7-point rating scale. The average stress rating for the PSQ-Op was 3.64, while the average stress rating for the PSQ-Org was 3.78. A paired-samples *t*-test compared these two means and determined that the PSQ-Org stressors were perceived to be significantly more stressful than the PSQ-Op stressors, $t(190) = 2.28$, $p < .02$.

Table 3.3 shows the basic descriptive statistics for the other three stress measures. The average of the PSS scores was slightly below the midpoint of its 5-point scale, as was the average Daily

Hassles score on its 4-point scale. The average number of negative life events experienced by the participants was 5, out of a possible 34.

Table 3.1: Range, mean, and standard deviation for the items from the PSQ-Op (stress ratings)

	Minimum	Maximum	Mean	Std. Deviation
Shift work	1	7	4.17	1.889
Working alone at night	1	7	3.60	1.760
Over-time demands	1	7	3.78	1.643
Risk of being injured on the job	1	7	3.42	1.636
Work-related activities on days off	1	7	3.65	1.525
Traumatic events	1	7	4.08	1.735
Managing social life outside work	1	7	3.39	1.653
Not enough time available to spend with friends and family	1	7	4.23	1.549
Paperwork	1	7	4.40	1.640
Eating healthy at work	1	7	3.67	1.612
Finding time to stay in good physical condition	1	7	4.02	1.624
Fatigue	1	7	4.71	1.577
Occupation-related health issues	1	7	3.74	1.750
Lack of understanding from family and friends about your work	1	7	3.24	1.658
Making friends outside the job	1	7	2.87	1.577
Upholding a higher image in public	1	7	3.08	1.667
Negative comments from the public	1	7	3.23	1.635
Limitations to your social life	1	7	3.07	1.624
Feeling like you are always on the job	1	7	3.39	1.630
Friends/family feel the effects of the stigma associated with your job	1	7	3.06	1.638
Mean Operational PSQ Score	1.30	6.50	3.6400	1.02000

Table 3.2: Range, mean, and standard deviation for the items from the PSQ-Org (stress ratings)

	Minimum	Maximum	Mean	Std. Deviation
Dealing with co-workers	1	7	3.41	1.519
Feeling that different rules apply to different people	1	7	4.23	1.628
Feeling like you always have to prove yourself to the organization	1	7	3.75	1.616
Excessive administrative duties	1	7	3.93	1.683
Constant changes in policy/legislation	1	7	3.90	1.614
Staff shortages	1	7	4.75	1.647
Bureaucratic red tape	1	7	4.47	1.800
Too much computer work	1	7	4.13	1.812
Lack of training on new equipment	1	7	3.44	1.534
Perceived pressure to volunteer free time	1	7	2.89	1.636
Dealing with supervisors	1	7	3.39	1.675
Inconsistent leadership style	1	7	4.22	1.801
Lack of resources/inadequate equipment	1	7	4.19	1.806
Unequal sharing of work responsibilities	1	7	4.09	1.610
If you are sick or injured your co-workers seem to look down on you	1	7	2.64	1.609
Leaders over-emphasize the negatives	1	7	3.71	1.843
Internal investigations	1	7	3.58	1.966
Dealing with the court system	1	7	3.92	1.810
The need to be accountable for doing your job	1	7	3.41	1.802
Inadequate equip	1	7	3.52	1.877
Mean Organizational PSQ Score	1.35	6.60	3.7800	1.08800

Table 3.3: Range, mean, and standard deviation for the three general stress measures

	Minimum	Maximum	Mean	Std. Deviation
Perceived Stress Scale Score	1.10	4.10	2.5262	.61607
Daily Hassles Scale Score	1.00	3.63	1.7768	.47134
Negative Life Events Score	.00	16.00	4.8608	2.88757

Reliability. The PSQ-Op's and PSQ-Org's reliability was assessed in two ways: (1) via Cronbach's coefficient alpha (should be > .80) and (2) corrected item-total correlations (should be ≥ .30). The Cronbach alphas for both the PSQ-Op and the PSQ-Org were .92. The corrected item-total correlations for the PSQ-Op ranged from .39 to .70, while for the PSQ-Org they ranged from .43 to .71. Combined, these reliability statistics suggest that the two measures have excellent internal consistency and can be used with confidence by researchers.

Correlations Between PSQs and General Stress Measures. Table 3.4 shows the correlations between the PSQ-Op, PSQ-Org, PSS, Daily Hassles Scale, and Negative Life Events Scale. These correlations all were significant and in the positive direction. As can be seen, the PSQ-Op shares between 12% and 30% of its variance (determined by r^2) with these other three general stress measures, while the PSQ-Org shares between 7% and 22% of its variance with the same three measures. This is a strong indication that, while there is some overlap in what they measure, the PSQ-Op and PSQ-Org are measuring separate and distinct constructs.

Table 3.4: Correlations between the PSQ-Op, PSQ-Org, and three other measures of general stress

		Operational PSQ Score	Organizational PSQ Score
Perceived Stress Scale Score	Pearson Correlation	.534**	.391**
	Sig. (2-tailed)	.000	.000
	N	192	191
Daily Hassles Scale Score	Pearson Correlation	.543**	.469**
	Sig. (2-tailed)	.000	.000
	N	189	188
Negative Life Events Score	Pearson Correlation	.348**	.262**
	Sig. (2-tailed)	.000	.000
	N	189	188

**. Correlation is significant at the 0.01 level (2-tailed).

Summary. Study 3 offers mounting evidence that the PSQ-Op and PSQ-Org are highly reliable measures of police stress. Their high alpha coefficients and robust corrected item-total correlations indicate that the items tap the operational and organizational police stress dimensions in a psychometrically reliable way. Thus, researchers can use these two measures with confidence. Study 3 also demonstrated that the PSQ-Op and PSQ-Org are not just tapping general dimensions of stress, such as those covered by the PSS, Daily Hassles Scale, and Negative Life Events Scale. While the correlations were significant, the amount of shared variance was low, suggesting that the PSQ-Op and PSQ-Org possess excellent discriminant validity with regard to these general stress constructs.

STUDY 4

Goals

The goals of Study 4 were to replicate the high degree of reliability the two PSQ questionnaires exhibited in Study 3 and to determine their concurrent validity. As with Study 3, reliability was determined by computing Cronbach's coefficient alpha (values should be higher than .80) and examining the scales' corrected item-total correlations (values should be higher than .30). Concurrent validity was determined by measuring the correlations among PSQ scores, job satisfaction, and both positive and negative work-related emotions. It was hypothesized that those with higher scores on both the PSQ questionnaires should report lower levels of job satisfaction and more negative work-related attitudes; these people also should report fewer positive job-related emotions. In other words, there should be a negative correlation between PSQ scores and both job satisfaction and positive work-related emotions, but a positive correlation between the two PSQ scores and negative work-related emotions.

Participants

The participants in Study 4 were 188 active duty police officers (159 men, 27 women, and two people who did not identify their gender). The age of the participants ranged from 22 to 57, with an average of 40 years (SD = 8 years). Seventy-seven percent of the participants were married, 10% were single, 1% was widowed, and 12% were either separated or divorced. Eighty-five percent of the participants had children. Eighty-three percent of participants were OPP officers. The OPP officers came from all six OPP regions: 10% from Central, 14% from Eastern, 7% from Greater Toronto, 30% from North-East, 5% from North-West, and 34% from Western. The non-OPP officers came from a variety of municipal police forces, plus the RCMP. Fifty-four percent of the participants reported patrolling a rural area, 43% reported patrolling an urban environment, while only 22% reported patrolling a suburban environment. The years of experience as a police officer ranged from 1 to 37, with an average of 17 years (SD = 9 years). Fifty-eight percent of the participants were Constables, 24% either were Sergeants, Acting Sergeants, Detective Sergeants, or Staff Sergeants, 10% were Inspectors, and 3% were Superintendents or Managers, while 5% did not report their rank.

Measures

Participants in Study 4 completed the PSQ-Op (Appendix 1) and PSQ-Org (Appendix 2) along with two measures of job satisfaction: the Job Satisfaction Survey and the Job-related Affective Well-being Scale.

Police Stress Questionnaires. Participants completed the same 20-item PSQ-Op and the 20-item PSQ-Org used in Study 3. Everyone was asked to rate how stressful they found each PSQ item to be, using a 7-point Likert scale ranging from "Not at All Stressful" to "Very Stressful." Responses to the PSQ-Op and PSQ-Org were averaged into separate scale scores. Higher scores indicate a greater degree of perceived stress in the operational and organization domains.

Job Satisfaction Survey. The Job Satisfaction Survey (JSS; Spector, 1985) is a commonly used 36-item questionnaire designed to measure job satisfaction among public sector employees (including police officers). The JSS contains nine separate dimensions (with 4 items in each): Satisfaction with Pay, Promotion Opportunities, Immediate Supervisor, Fringe Benefits (both monetary and non-monetary), Contingent Rewards (appreciation, recognition, and rewards for work well-done), Operating Policies and Procedures, Co-workers, Nature of the Work, and Communication within the Organization. Items on the JSS are scored on a 6-point Likert scale, ranging from "Disagree Very Much" to "Agree Very Much." Researchers using the JSS can compute either the overall JSS total (possible range = 36 to 216), or the total of each of the separate subscales (possible range = 4 to 24), after reverse-coding 19 items. The JSS has demonstrated reliability and validity (Spector, 1997). The Cronbach alpha reliability coefficients in the present study were .88 for the overall JSS score and between .57 (Satisfaction with Operating Policies and Procedures) and .83 across the nine subscales, with 7 of the 9 subscales having reliability coefficients greater than or equal to .70.

Job-related Affective Well-being Scale. The Job-related Affective Well-being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000) is a 30-item scale designed to measure people's positive and negative emotional reactions to their jobs. Positive work-related emotions are assessed using 15 of the JAWS's items, while negative emotions are assessed using the remaining 15 items. Participants are asked to rate each item for how frequently they have felt that way over the past 30 days; ratings are made on a 5-point Likert scale ranging from "Never" to "Extremely Often or Always." The JAWS has demonstrated reliability and validity (Van Katwyk et al., 2000). The Cronbach alpha reliability coefficients in the present study were .92 for the Positive Emotions subscale and .87 for the Negative Emotions subscale.

Procedures

Potential participants were approached by an experienced research consultant during upgrading courses at the OPP Academy in Orillia (ON) and the Ontario Police College in Aylmer (ON). All were invited to participate in a study whose goal was to develop two reliable and valid police stress questionnaires, one measuring Operational stress and the other measuring Organizational stress. They were told that they would be asked to fill out these two questionnaires plus two other short questionnaires.

All questionnaires were completed out of class and in small groups. The research consultant outlined the goals of the study a second time, briefed the participants on the informed consent

process and confidentiality issues, and answered any questions. After participants gave their informed consent, the research consultant handed out questionnaire booklets containing the PSQ-Op, the PSQ-Org, the Job Satisfaction Survey, Job-related Affective Well-being Scale, and a series of demographic questions. A space for additional comments was included at the end of the questionnaire booklet. Participants received a nominal payment ($12.00 in gift certificates) for their participation in the study.

Results and Discussion

Descriptive Statistics. Tables 4.1 and 4.2 report the basic descriptive statistics associated with the PSQ-Op and PSQ-Org ratings. As can be seen, most items were perceived to be moderately stressful, with average item ratings tending to fall slightly above or slightly below (+/- 1 point) the midpoint in the 7-point rating scale. The average stress rating for the PSQ-Op was 3.32, while the average stress rating for the PSQ-Org was 3.74. A paired-samples *t*-test compared these two means and determined that the PSQ-Org stressors were perceived to be significantly more stressful than the PSQ-Op stressors, $t(185) = 7.44$, $p < .0001$.

Table 4.3 shows the basic descriptive statistics for the JSS, its 9 subscales, and the two subscales from the JAWS. The overall JSS mean score ($M = 145$) was 19 points above the scale midpoint (i.e., 126), suggesting that, on average, the officers were fairly satisfied. Participants scored below the midpoint (i.e., 14) on two subscales (Satisfaction with Promotion Opportunities, Satisfaction with Operating Policies and Procedures), at the midpoint on Satisfaction with Communication within the Organization, and above the midpoint on the six other subscales. Table 4.3 also shows that participants scored above the midpoint (i.e., 45) on the JAWS's Positive Emotions subscale, but below the midpoint on the Negative Emotions subscale, suggesting that participants had more strongly positive than negative emotions about their job.

Reliability. The PSQ-Op's and PSQ-Org's reliability was assessed in the same two ways as in Study 3: (1) via Cronbach's alpha (should be > .80) and (2) corrected item-total correlations (should be ≥ .30). The Cronbach alpha for the PSQ-Op was .93, while the alpha for the PSQ-Org was .92. The corrected item-total correlations for the PSQ-Op ranged from .50 to .70, while for the PSQ-Org they ranged from .41 to .73. These reliability statistics again suggest that the two measures have excellent internal consistency and can be used with confidence by researchers.

Table 4.1: Range, mean, and standard deviation for the items from the PSQ-Op (stress ratings)

	Minimum	Maximum	Mean	Std. Deviation
Shift work	1	7	3.60	1.809
Working alone at night	1	7	3.23	1.813
Over-time demands	1	7	3.31	1.586
Risk of being injured on the job	1	7	2.92	1.609
Work-related activities on days off	1	7	3.36	1.591
Traumatic events	1	7	3.69	1.723
Managing social life outside work	1	7	3.07	1.563
Not enough time available to spend with friends and family	1	7	3.60	1.670
Paperwork	1	7	4.37	1.635
Eating healthy at work	1	7	3.56	1.660
Finding time to stay in good physical condition	1	7	3.74	1.677
Fatigue	1	7	3.94	1.673
Occupation-related health issues	1	7	3.43	1.696
Lack of understanding from family and friends about your work	1	7	2.91	1.639
Making friends outside the job	1	7	2.66	1.615
Upholding a higher image in public	1	7	2.79	1.578
Negative comments from the public	1	7	3.16	1.671
Limitations to your social life	1	7	2.90	1.603
Feeling like you are always on the job	1	7	3.27	1.646
Friends/family feel the effects of the stigma associated with your job	1	7	2.79	1.487
Mean Operational PSQ Score	1.00	6.45	3.3200	1.05300

Table 4.2: Range, mean, and standard deviation for the items from the PSQ-Org (stress ratings)

	Minimum	Maximum	Mean	Std. Deviation
Dealing with co-workers	1	7	3.18	1.546
Feeling that different rules apply to different people	1	7	4.14	1.612
Feeling like you always have to prove yourself to the organization	1	7	3.26	1.518
Excessive administrative duties	1	7	4.35	1.753
Constant changes in policy/legislation	1	7	4.04	1.648
Staff shortages	1	7	4.58	1.739
Bureaucratic red tape	1	7	4.65	1.635
Too much computer work	1	7	4.34	1.708
Lack of training on new equipment	1	7	3.39	1.638
Perceived pressure to volunteer free time	1	7	2.68	1.543
Dealing with supervisors	1	7	3.42	1.636
Inconsistent leadership style	1	7	4.38	1.789
Lack of resources/inadequate equipment	1	7	4.17	1.749
Unequal sharing of work responsibilities	1	7	3.94	1.818
If you are sick or injured your co-workers seem to look down on you	1	7	2.53	1.591
Leaders over-emphasize the negatives	1	7	3.45	1.737
Internal investigations	1	7	3.75	1.991
Dealing with the court system	1	7	3.81	1.727
The need to be accountable for doing your job	1	7	3.10	1.629
Inadequate equip	1	7	3.68	1.772
Mean Organizational PSQ Score	1.00	6.40	3.7400	1.07500

Table 4.3: Range, mean, and standard deviation for the Job Satisfaction Survey and the Job-related Affective Well-being Scale

	Minimum	Maximum	Mean	Std. Deviation
Overall Job Satisfaction Survey Score	72.00	196.00	144.5560	22.04327
Satisfaction with Pay score from the JSS	4.00	24.00	17.5592	4.27841
Satisfaction with Promotion Opportunities score from the JSS	4.00	24.00	13.8586	4.48695
Satisfaction with Immediate Supervisor score from the JSS	4.00	24.00	18.1118	4.85109
Satisfaction with Monetary and Non-Monetary Fringe Benefits score from the JSS	5.00	24.00	15.4127	4.17126
Satisfaction with Contingent Rewards (Appreciation, Recognition, and Rewards for Good Work) score from the JSS	4.00	24.00	15.2109	4.44780
Satisfaction with Operating Policies and Procedures score from the JSS	5.00	23.00	12.6354	3.62067
Satisfaction with Co-Workers score from the JSS	8.00	24.00	17.6862	3.57538
Satisfaction with Nature of the Work score from the JSS	6.00	24.00	19.7074	3.51385
Satisfaction with Communication within the Organization score from the JSS	4.00	23.00	14.3738	4.05138
Positive Emotions Subscale from the JAWS	23.00	70.00	48.2128	9.43355
Negative Emotions Subscale from the JAWS	21.00	61.00	36.0788	8.46692

Correlations Among the PSQ-Op, PSQ-Org, JSS and JAWS. To determine the degree to which perceived stress associated with operational and organizational aspects of policing were associated with job satisfaction (as measured by the JSS and JAWS), a series of bivariate correlations were computed between the PSQ-Op and PSQ-Org, on the one hand, and the JSS and JAWS on the other. The correlations between the PSQ scales and the JSS and its subscales are presented in Table 4.4. Higher ratings of stress on both the PSQ-Op and PSQ-Org were associated with lower overall levels of job satisfaction. Organizational police stressors appeared

to be more strongly associated with poorer job satisfaction (r^2 values ranging from 2% to 25%) than operational police stressors (r^2 values ranging from 1% to 21%). PSQ-Op scores were negatively correlated with 8 of the 9 JSS subscales, while PSQ-Org scores were negatively associated with all 9 JSS subscales.

Table 4.4: Correlations between PSQ-Op, PSQ-Org, overall JSS score, and JSS subscales

		Operational PSQ	Organizational PSQ
Overall Job Satisfaction Survey Score	Pearson Correlation	-.371**	-.556**
	Sig. (2-tailed)	.000	.000
Satisfaction with Pay	Pearson Correlation	-.190**	-.202**
	Sig. (2-tailed)	.009	.006
Satisfaction with Promotion Opportunities	Pearson Correlation	-.192**	-.427**
	Sig. (2-tailed)	.008	.000
Satisfaction with Immediate Supervisor	Pearson Correlation	-.099	-.324**
	Sig. (2-tailed)	.175	.000
Satisfaction with Fringe Benefits	Pearson Correlation	-.211**	-.146*
	Sig. (2-tailed)	.004	.047
Satisfaction with Contingent Rewards	Pearson Correlation	-.298**	-.397**
	Sig. (2-tailed)	.000	.000
Satisfaction with Operating Policies and Procedures	Pearson Correlation	-.461**	-.500**
	Sig. (2-tailed)	.000	.000
Satisfaction with Co-Workers	Pearson Correlation	-.157*	-.289**
	Sig. (2-tailed)	.031	.000
Satisfaction with Nature of the Work	Pearson Correlation	-.189**	-.220**
	Sig. (2-tailed)	.009	.003
Satisfaction with Communication within the	Pearson Correlation	-.226**	-.438**
	Sig. (2-tailed)	.002	.000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations between the PSQ-Op, PSQ-Org, and the Positive and Negative Emotions subscales from the JAWS are presented in Table 4.5. As this table shows, the more stress associated with both the PSQ-Op and PSQ-Org items, the fewer positive and more negative job-related emotions participants experienced. The correlations between the police stressors and the JAWS subscales appear to be only slightly higher for the organizational (r^2 values ranging from 6% to 11%), as opposed to the operational (r^2 values ranging from 4% to 7%), stressors.

Table 4.5: Correlations between PSQ-Op, PSQ-Org, Positive and Negative Emotions JAWS subscales

		Operational PSQ	Organizational PSQ
Positive Emotions	Pearson Correlation	-.199**	-.250**
	Sig. (2-tailed)	.006	.001
Negative Emotions	Pearson Correlation	.269**	.343**
	Sig. (2-tailed)	.000	.000

**. Correlation is significant at the 0.01 level (2-tailed).

Summary. Study 4 replicated the excellent reliability statistics for both the PSQ-Op and PSQ-Org; coefficients alpha for these scales were both above .90, while corrected item-total correlations all were between .41 and .73. Concurrent validity for the PSQ-Op and PSQ-Org was demonstrated by the correlations between stress ratings for the PSQ items and ratings on two measures of job satisfaction: the JSS and the JAWS. In all but once instance, higher scores on the PSQ scales were associated with poorer job satisfaction.

GENERAL DISCUSSION

These four studies represent the development of the Operational Police Stress Questionnaire (PSQ-Op; Appendix 1) and the Organizational Police Stress Questionnaire (PSQ-Org; Appendix 2).

In Study 1, a series of focus groups was utilized to identify the main stressors associated with policing. A theoretical framework in which it was recognized that work-family boundaries are permeable (i.e., work stressors affect family stress and family stressors influence work stress) guided the selection of the four main questions that were used to elicit these stressors: (1) "What do you consider to be the most stressful aspects of policing?" (2) "What is the impact of job-related stress on your family or in other police families that you are aware of?" (3) "What are the effects of stress at home on your job performance? Or, what effects have you seen in others?" (4) "What are the effects of the job on your health or on the health of other officers?" The findings from these focus groups indicated that officers grouped stressors into two general categories: *Operational stressors* (i.e., stressors associated with doing the job) and *Organizational stressors* (i.e., stressors associated with the organization and organizational culture within which one works). This distinction, which emerged naturally from the focus groups, replicated past research by Symonds (1970) and Hart et al. (1993).

Based on an overview of the focus group discussions, initial drafts of the PSQ-Op and PSQ-Org were developed. The decision to separate the organizational and operational items into distinct questionnaires was based on practical considerations. First, having the PSQ-Op and PSQ-Org as separate instruments gives researchers greater flexibility when studying police stress. That is, researchers can choose to study operational stress, organizational stress, or both. Similarly, if researchers choose to study only one of the two dimensions, they are not separating items from a larger measure, but rather are using a separately developed questionnaire. It was decided to

divide the PSQ-Op and PSQ-Org for a third reason as well: survey burden. That is, officers participating in a study of occupational stress are typically given a large number of questionnaires to complete (i.e., so that outcomes of occupational stress – burnout, depression, physical health problems – can be assessed). The two PSQ scales are only 20 items each. Thus, even if they are used together, they represent a considerable reduction in the items on other measures of police stress (Hart et al.'s Police Hassles Scale has 86 items; Spielberger et al.'s original PSS has 60 items, Cooper et al.'s Occupational Stress Indicator has 61 items pertaining to work stress). In fact, we would argue that one these measures of police stress have not been used more consistently in the research literature is that their excessive number of items contributes to survey burnout in this busy occupational group. Finally, the choice to separate the PSQ-Op and PSQ-Org was influenced by the sample size requirements to assess adequately the reliability of validity of any measure. That is a single questionnaire with a larger number of items would require a larger sample size to conduct psychometric analyses and multivariate statistical analyses. However, by separating out the two dimensions into separate measures of police stress, we effectively reduced to a more manageable number the minimum sample size researchers would require to conduct these analyses.

Study 2 was the first test of the psychometric properties of the PSQ-Op and PSQ-Org, as well as its initial validity test, and a real-world test of the wording of both the scales' instructions and the wording of their items. The initial psychometric properties of the two PSQs were excellent, with coefficients alpha and corrected item-total correlations above their minimum expected values. An initial test of the validity of the stressors also was performed. A correlational analysis was performed on the association between the average stress ratings of the PSQ-Op and PSQ-Org and participants' ratings of how frequent the stressors occur. The correlations were positive, as expected, but not perfect. In fact, only 45% to 52% of the variance in stress ratings could be explained by frequency ratings. This means that stress ratings and frequency ratings could be used separately in any assessment of the association between these operational and organizational stressors and health and well-being outcomes. However, based on the findings from this group of 47 police officers, the wording of the instructions and some items was changed. In addition, one item was split into two. Because these were minor issues, we then moved onto a more thorough test of the PSQ-Op's and PSQ-Org's reliability and validity.

Study 3 was the first large-scale test of the reliability and validity of the PSQ-Op and PSQ-Org. In a sample of 197 police officers, we were able to determine that the two PSQs had excellent reliability. Cronbach alphas and corrected item-total correlations were well above their minimum cut-off criteria, suggesting that the items for each were highly robust indicators of their latent constructs. The discriminant validity of the two PSQ measures was demonstrated via the low to moderate correlations between the police stress questionnaires and three measures of general stress. That is, the responses to the PSQ-Op and PSQ-Org scales overlapped only slightly (i.e., a maximum of 30% shared variance) with the general stress measures, indicating that the PSQ-Op and PSQ-Org are measuring something related to, but independent of, these other measures of stress.

In Study 4, the PSQ reliability findings were replicated and concurrent validity was established. In a group of 188 experienced police officers, both the PSQ-Op and PSQ-Org demonstrated excellent reliability for a third time. Given the consistency of the reliability findings across Study

2, Study 3, and Study 4, we are confident in saying that the PSQ-Op and PSQ-Org are highly reliable measures.

Furthermore, Study 4 demonstrated concurrent validity in that higher ratings of operational and organizational police stress were associated with lower levels of job satisfaction in two separate measures: the JSS and the JAWS. The similarity in findings across the two measures of job satisfaction is important because the JSS measures direct satisfaction with nine aspects of a public service job. The JAWS, on the other hand, measures emotions associated with the job. Because these are two separate dimensions of job satisfaction, finding that PSQ-Op and PSQ-Org scores are correlated with both reinforces the concurrent validity of the police stress measures.

The development of the PSQ-Op and PSQ-Org represents an advance in the measurement of the occupational stress associated with policing. In the past, researchers have been limited to using general occupational stress measures (e.g., Spielberger et al.'s Job Stress Survey). Using measures such as these cannot determine the influence of occupationally-specific job components. For example, while many of the organizational stressors found on the Job Stress Survey and PSQ-Org may be similar to those in other occupations (e.g., dealing with co-workers, excessive administrative duties, dealing with supervisors, inconsistent leadership style), policing has specific organizational stressors that these more general measures do not assess (e.g., changes in legislation, internal investigations, pressure to volunteer free time). Furthermore, general occupational stress measures do not tap the operational aspects of policing that are stressful (e.g., traumatic events, trying to eat healthy and exercise, feeling like you are always on the job).

A second advancement this research represents is that most of the other policing-specific stress measures were developed in countries whose policing culture may be distinct from Canada's. For example, items on the PSS ask about shooting someone in the line of duty and high-speed car chases. These are less common in Canadian policing than in American policing. Similarly, the wording of items on the stress measure used by Brown et al. (1999) contains phrasings that would have to be changed when used in a sample of non-British police officers (e.g., RTA, Road Traffic Accident; 10/9, Officer requires assistance). The PSQ-Op and PSQ-Org also were developed to assess a broader range of policing than others. While the PSS was developed using a more urban police force, the two PSQs were developed using officers from both rural and urban settings. With item selection taken from a broad range of officers, the lack of acronyms and culture-specific items, and with reliability and validity conducted in a mixed rural/urban sample, we feel that the PSQ-Op and PSQ-Org can be used in a wide range of police environments, even those outside of Canada.

Future research using the PSQ-Op and PSQ-Org can take several directions. One possibility is the further assessment of both questionnaires' psychometric properties. Exploratory factor analysis could be undertaken to determine whether the PSQ-Op and PSQ-Org have meaningful, lower-order factors. However, we caution researchers that we feel the PSQ-Op and PSQ-Org have both conceptual and empirical relevance in their current state. As such, any study of their lower-order factor structure should also include a test of a single-factor, higher-order model.

A second possibility for future research is continued validity work. In our initial assessment here, we asked participants to rate how stressful they found each PSQ item. Now that these studies have shown direct associations among the perceived stress levels of these items and measures of self-reported general stress and occupational satisfaction, researchers should assess the degrees to which respondents *experience* these police stressors and other outcomes (e.g., physical health, psychological well-being, employee relations). To this end, we have revised the instructions on both the PSQ-Op and PSQ-Org to ask participants to rate how much stress each item has caused them over the past six months. This change in wording also has the benefit of bringing these instructions more in line with other stress measures.

On a more applied level, researchers may want to study group differences in police stress. For example, do officers in more rural settings experience more operational or organizational stress compared to their urban and suburban counterparts? This has special relevance to the Ontario Provincial Police who ask new officers to undergo a duration positing. In these postings, officers are deployed to a remote area in Northern and Western Ontario; the more remote the posting, the shorter its duration (i.e., a minimum of two-years, but longer if the posting is closer to a larger centre). Moving to these types of environments mean the officers may leave behind important coping resources and social support networks, putting them at higher risk for stress-related health problems. These environments also have a larger patrol area and fewer resources. Stress associated with policing in this type of isolated environment also is important for the Royal Canadian Mounted Police, who serve much of rural Canada.

Because we feel that the items on the PSQ-Op and PSQ-Org are not specific to the Ontario or Canadian policing culture, we feel that they have generalizability to police stress researchers in other countries. With this in mind, it would be interesting to examine whether police officers in different countries differ in their stress ratings. To our knowledge, no cross-cultural research has been performed in this area.

But researchers may not wish to focus solely on the negative outcomes associated with occupational stress. That is, not all officers who experience stress will have a stress-related problem. Why are some officers more resilient than others? Do some officers experience stress-related growth? Can the variables that influence resilience and stress-related growth be identified and taught to others? These are but a few examples of future research directions in a field of study that is, for the most part, understudied.

Finally, policy makers within police organizations and unions can use the data from these two questionnaires to design a less stressful working environment for their employees or members. Where police forces may want to start is with the Organizational stressors. We suggest this because PSQ-Org scores were significantly higher than PSQ-Op scores in all studies. Similarly, the correlations between PSQ-Org scores and both JSS and JAWS scores were much higher than the similar correlations between PSQ-Op scores and these measures of job satisfaction. He PSQ-Org may be a viable measure of the effectiveness of any intervention developed and implemented by a police organization to reduce organizational stressors.

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APPENDIX 1

OPERATIONAL POLICE STRESS QUESTIONNAIRE
(Final Version)

Operational Police Stress Questionnaire

Below is a list of items that describe different aspects of being a police officer. After each item, please circle how much stress it has caused you over the past 6 months, using a 7-point scale (see below) that ranges from "No Stress At All" to "A Lot Of Stress":

No Stress At All			Moderate Stress			A Lot Of Stress
1	2	3	4	5	6	7

1. Shift work	1	2	3	4	5	6	7
2. Working alone at night	1	2	3	4	5	6	7
3. Over-time demands	1	2	3	4	5	6	7
4. Risk of being injured on the job	1	2	3	4	5	6	7
5. Work related activities on days off (e.g. court, community events)	1	2	3	4	5	6	7
6. Traumatic events (e.g. MVA, domestics, death, injury)	1	2	3	4	5	6	7
7. Managing your social life outside of work	1	2	3	4	5	6	7
8. Not enough time available to spend with friends and family	1	2	3	4	5	6	7
9. Paperwork	1	2	3	4	5	6	7
10. Eating healthy at work	1	2	3	4	5	6	7
11. Finding time to stay in good physical condition	1	2	3	4	5	6	7
12. Fatigue (e.g. shift work, over-time)	1	2	3	4	5	6	7
13. Occupation-related health issues (e.g. back pain)	1	2	3	4	5	6	7
14. Lack of understanding from family and friends about your work	1	2	3	4	5	6	7
15. Making friends outside the job	1	2	3	4	5	6	7
16. Upholding a "higher image" in public	1	2	3	4	5	6	7
17. Negative comments from the public	1	2	3	4	5	6	7
18. Limitations to your social life (e.g. who your friends are, where you socialize)	1	2	3	4	5	6	7
19. Feeling like you are always on the job	1	2	3	4	5	6	7
20. Friends / family feel the effects of the stigma associated with your job	1	2	3	4	5	6	7

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APPENDIX 2

ORGANIZATIONAL POLICE STRESS QUESTIONNAIRE
(Final Version)

Organizational Police Stress Questionnaire

Below is a list of items that describe different aspects of being a police officer. After each item, please circle how much stress it has caused you over the past 6 months, using a 7-point scale (see below) that ranges from "No Stress At All" to "A Lot Of Stress":

No Stress At All			Moderate Stress			A Lot Of Stress
1	2	3	4	5	6	7

1. Dealing with co-workers	1	2	3	4	5	6	7
2. The feeling that different rules apply to different people (e.g. favouritism)	1	2	3	4	5	6	7
3. Feeling like you always have to prove yourself to the organization	1	2	3	4	5	6	7
4. Excessive administrative duties	1	2	3	4	5	6	7
5. Constant changes in policy / legislation	1	2	3	4	5	6	7
6. Staff shortages	1	2	3	4	5	6	7
7. Bureaucratic red tape	1	2	3	4	5	6	7
8. Too much computer work	1	2	3	4	5	6	7
9. Lack of training on new equipment	1	2	3	4	5	6	7
10. Perceived pressure to volunteer free time	1	2	3	4	5	6	7
11. Dealing with supervisors	1	2	3	4	5	6	7
12. Inconsistent leadership style	1	2	3	4	5	6	7
13. Lack of resources	1	2	3	4	5	6	7
14. Unequal sharing of work responsibilities	1	2	3	4	5	6	7
15. If you are sick or injured your co-workers seem to look down on you	1	2	3	4	5	6	7
16. Leaders over-emphasise the negatives (e.g. supervisor evaluations, public complaints)	1	2	3	4	5	6	7
17. Internal investigations	1	2	3	4	5	6	7
18. Dealing the court system	1	2	3	4	5	6	7
19. The need to be accountable for doing your job	1	2	3	4	5	6	7
20. Inadequate equipment	1	2	3	4	5	6	7

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